REMARKS

Claims 25-29 and 38-47 were pending in the application. Claims 45 and 47 have been amended. New claims 48 and 49 have been added. Accordingly, after entry of the instant amendments, claims 25-29 and 38-49 will be pending in the application.

No new matter has been added by way of the amendments to the claims or the addition of the new claims. Support for the amendments to claims 45 and 47, as well as new claims 48 and 49, can be found in the specification and claims as originally filed.

Applications thank the Examiner for withdrawal of all previous rejections, for the withdrawal of the species election requirement, and for the indication that certain claims would be allowable if

Rejection of Claims 25-39, 38-44 and 46 Under 35 U.S.C. §112, first paragraph

Claims 25-39, 38-44 and 46 have been rejected under 35 U.S.C. §112, first paragraph, because, according to the Examiner,

> the specification, while being enabling for "effector molecules" selected from the group consisting of antigenic peptides, specific cell toxins, receptor ligand, radionuclide, or a myc, 6xHIS or EE tag, does not reasonably provide enablement for the full range of molecules that qualify as "effector molecules" or for a "drug" as the effector molecule....Beyond the effector molecules and chemotherapeutic drugs enumerated in the specification, the artisan would not be able to envision the full scope of "effector molecules" or "drugs" as encompassed by the claims and would therefore be required to engage in an undue amount of experimentation in order to make or use the claimed complexes of the invention.

Applicants respectfully traverse this rejection. It is not necessary for a patent application to disclose each and every embodiment of a claimed invention in order to satisfy the enablement requirement. As long as the specification discloses ***at least one*** method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement is satisfied. M.P.E.P. § 2164.01(b). Additionally, when a compound or composition claim is not limited by a recited use, ***any enabled use*** that would reasonably

correlate with the entire scope of the claim ***is sufficient*** to preclude a rejection for nonenablement based on how to use. M.P.E.P. § 2164.01(c).

Despite asserting that the "specification provides only a limited disclosure of effector molecules," the Examiner then goes on to quote passages from the specification which disclose a broad range of such molecules. As disclosed at page 48, lines 5-6 in a passage quoted by the Examiner, "[s]uitable effector molecules include those which impart a desired biological, chemical or physical property to the MHC complex." Such biological, chemical, and physical properties are not limited to "exert[ion] of an effect on the cell-mediated and humoral immune response of a subject," a limitation that the Examiner seems to be improperly reading into the claims. On the contrary, the MHC molecules of the invention have a much broader range of uses, which are set forth at page 6, line 8, through page 7, line 17:

> For example, the MHC complexes of the invention can be used to detect and analyze a variety of ligands such as peptides. Particularly, the MHC class II complexes can also be used as provided for diagnostic purposes such as for the detection of T-cells with pathogenic properties. The MHC complexes can additionally be employed in functional, cellular and molecular assays, and in structural analysis, including X-ray crystallography, nuclear magnetic resonance imaging, computational techniques such as computer graphic display. Significantly, the single-chain format and enhanced soluble expression of the MHC complexes is expected to simplify several aspects of data collection and analysis. The MHC complexes can also be used in screens to identify and isolate TCR and/or MHC agonists and antagonists, particularly small molecules that inhibit interaction between naturally-occurring TCRs and MHC complexes. Additionally, a variety of known techniques can be used to screen for small molecules that potentially block interaction between an MHC complex of the invention and a TCR or MHC complex-specific antibody.
>
> The MHC complexes of the invention have significant uses in vivo. For example, the complexes can be employed to compete with pathogenic antigen presenting cells (APCs) such as those implicated in an immune-related disorder or disease; or to immunize mammals, e.g., humans, against MHC structures such as extracellular regions that occur on the surface of APCs and which perform or help other molecules perform pathogenic or otherwise harmful functions. Particularly, the MHC class II complexes of the invention can be used to raise antibodies according to

> known immunological methods such as those described below. The antibodies produced by the methods that can be used in therapeutic strategies designed to modulate immune responses in vivo, e.g., by inhibiting or reducing numbers of specific APCs that recognize a desired antigen. Particularly, monoclonal antibodies can be selected that specifically bind MHC epitopes so that a restricted APC subset or population implicated in an immune disorder or disease or other pathology can be targeted and preferably eliminated. As will be described more fully below, the APCs or antibodies binding same can be unmodified, or if desired, can be covalently linked to drugs, toxins, radionuclides or other agents such as enzymes.
>
> Additionally, the MHC complexes of the invention can be used to screen immune cells such as T-cells expressing a desired target structure in vitro. It has been useful in several settings to obtain and expand selected T-cells expressing target structures such as cell receptors glycoproteins, lipoproteins, lipids, glycolipids and carbohydrates. Significantly, a single polyspecific MHC complex of the invention can be used to select-cells expressing multiple target structures.

The Examiner has admitted that a variety of different effector molecules are enabled by the specification. The assertion by the Examiner that "the terms 'effector molecule' and 'drug' reasonably read upon substances that have no relationship whatsoever to the immune response" is not relevant, as the effector molecules need only impart a chemical, biological, or physical property on the MHC complex. Furthermore, it should be noted that the term "drug" is used in the claims in the context of a "chemotherapeutic drug", which is an art-recognized term used to describe chemical agents used in cancer and autoimmune therapies. A number of specific examples of chemotherapeutic agents are disclosed in the specification on page 48, in the passage quoted by the Examiner.

Moreover, no substantiating reasons have been advanced as to why one skilled in the art could not make and use the claimed invention. Indeed, the discussion above makes clear that one skilled in the art could readily practice the claimed invention in view of Applicants' disclosure.

Respectfully, such a rejection, lacking any supporting evidence or other substantiating grounds, is simply not proper. See, for instance, Section 2164.04 of the Manual of Patent Examining Procedure, which states in part (quoting *In re Marzocchi*, 169 USPQ at 370)

> [I]t is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain *why* it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise, there would be no need for the applicant to go to the trouble or expense of supporting his presumptively accurate disclosure.

In view of the above, Applicants submit that the claims are enabled, and respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §112, first paragraph.

Allowable claims

Applicants thank the Examiner for the indication that certain claims would be allowable if rewritten in independent form. Applicants note that on page 4 of the Office Action, in the first paragraph of the Conclusion, claims 45 and 46 have been indicated as allowable but objected to, but that on page 1 of the Office Action, the Office Action Summary indicates that claims 45 and 47 are the claims that are objected to. Given that claim 46 was rejected under 35 U.S.C. 112, Applicants assume that the indication of claim 46 as allowable on page 4 was a typographical error, and have addressed the objection as applied to claims 45 and 47.

Applicants have rewritten claims 45 and 47 as independent claims that incorporate all of the limitations of the claims from which they originally depended, except with respect to multiple dependencies. New claims 48 and 49 have been added to accommodate the multiple dependencies of intervening dependent claims 44 and 46, respectively. That is, as amended, claim 45 incorporates the limitations of claims 44 and 25, while new claim 48 incorporates the limitations of claim 45, as it depended from claims 44 and 28. As amended, claim 47 incorporates the limitations of claims 46 and 26, while new claim 49 incorporates the limitations of claim 47, as it depended from claims 46 and 29.

Applicants respectfully submit that amended claims 45 and 47, as well as new claims 48 and 49, are allowable, and respectfully request reconsideration and withdrawal of the objection.

CONCLUSION

It is believed the application is in condition for immediate allowance, which action is earnestly solicited. If a telephone conversation with Applicants' agent would expedite the prosecution of the above-identified application, the examiner is urged to call the undersigned at (617) 439-4444.

Respectfully submitted,

Jennifer K. Rosenfield (Reg. No. 53,531)
Intellectual Property Practice Group of
EDWARDS & ANGELL LLP
P.O. Box 55874
Boston, Massachusetts 02205
Tel.: 617.439.4444
Fax 617.439.4170

Customer No. 21874

Date: August 5, 2004